



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,946	10/07/2002	Richard J Roman	650053--91533	8704
7590		01/19/2007		
Zhibin Ren Quarles & Brady 411 East Wisconsin Avenue Suite 2040 Milwaukee, WI 53202-4497			EXAMINER SWOPE, SHERIDAN	
			ART UNIT	PAPER NUMBER
			1652	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/19/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 09/937,946	Applicant(s) ROMAN ET AL.	
	Examiner Sheridan L. Swope	Art Unit 1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,7-11,15,17 and 37-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,7-11,15,17 and 37-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 1652

### **DETAILED ACTION**

The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 1652.

### **DETAILED ACTION**

Applicant's Request for Continuing Examination of July 7, 2006, in response to the Final Rejection mailed April 5, 2006, is acknowledged. It is acknowledged that no claims have been cancelled, amended, or added. Claims 1, 7-11, 15, 17, and 37-44 are pending and are hereby reexamined.

#### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

#### ***Double Patenting***

Rejection of Claims 1, 7-11, 15, 17, and 37-44 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-4, 6-13, 19-22, and 24-28 of US Application No. 10/986,695 is maintained. Applicants' state in their response that they "stand ready to address the rejection should it be maintained as an actual rejection".

#### ***Claim Rejections - 35 USC § 112-First Paragraph***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

### **Enablement**

Rejection of Claims 1, 7-11, 15, 17, and 37-44 under 35 U.S.C. 112, first paragraph lack of enablement, for the reasons previously explained, is maintained. In support of their request that said rejection be withdrawn, Applicants provide the following arguments.

(A) 20-HETE synthesizing enzymes that are of the CYP4A or CYP4F subclass are known in the art by their amino acid sequences.

(B) Identifying new 20-HETE synthesizing enzyme inhibitors is not part of the instant invention. The invention only calls for the use of known inhibitors or those that will be come known in the future.

(C) The Examiner's argument regarding *Chiron Corp v. Genentech* is not relevant here. In said case, the claims were directed to chimeric antibodies, which was a new technology at the time said applications were filed. Such is not the case in the present application. Known 20-HETE synthesizing enzyme inhibitors are either commercially available or can be readily made.

(D) The gist of the invention resides in the recognition that the four cerebral vascular disease recited in the claims are associated with an increase in 20-HETE level and that inhibitors of CYP4A and CYP4F are effective in treating the diseases. Examples of said inhibitors are disclosed.

(E) Regarding the Examiner's statement that neither 17-ODYA nor miconazole is a specific inhibitor is irrelevant. The relevant point is that said compounds inhibit CYP4A and/or CYP4F and, thus, can be used in the recited method.

(F) Clinical data is not required to enable an invention.

Art Unit: 1652

(G) Hoagland et al, 2003 is concerned with hypertension, not one of the four diseases recited in the claims. Clarification of the relevance of Hoagland et al is requested.

These arguments are not found, or are found, to be persuasive for the following reasons. It is acknowledged that

(A) Reply: For the full scope of the recited invention to be practiced, either the specification or the prior art, at the time of filing, must enable the recited invention (MPEP 2164.05(a) [R-2]). Neither the specification nor the prior art enable the skilled artisan to make and use the full scope of treating the recited cerebral vascular diseases with any inhibitor of any CYP4A or any CYP4F enzyme, wherein the inhibitor has any structure and, wherein the enzyme has any structure. It is acknowledged that the specification teaches that HET0016 is an inhibitor of CYP4A11 and CYP4F2 (Fig 11). It is also acknowledged that the art teaches that DDMS is an inhibitor of HETE synthesis by CYP4A1 and CYP4A3 enzymes (Wang et al, 1998; pg 971, para 2). Because, only a few examples of an inhibitor of CYP4F have been disclosed, the skilled artisan is not in possession of sufficient guidance to make and use any inhibitor of CYP4F. Furthermore, HET0016 has been shown to inhibit only a single member of each of the CYP4A subtype of HETE synthesizing enzymes, CYP4A11. DDMS is the only compound that has been shown to inhibit more than a single member of the CYP4A subfamily. Based on such teachings, neither the prior art nor the specification provide sufficient guidance to enable the skilled artisan to make and use a method of treatment using any inhibitor of any CYP4A enzyme, wherein the inhibitor has any structure and, wherein the CYP4A has any structure.

(B) Reply: It is acknowledged that identifying new 20-HETE synthesizing enzyme inhibitors is not part of the instant invention.

Art Unit: 1652

MPEP 2164.01(a) states:

A conclusion of lack of enablement means that, based on the evidence regarding the Wands factors, the specification, at the time the application was filed, would not have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation. (Examiner's emphasis)

For a method to be enabled the steps and reagents to be used in order to obtain the desired goal of said method must be provided by the disclosure or the prior art at the time of filing.

Applicants' clearly acknowledge that they have not taught the skilled artisan how to practice treatment with any inhibitor of any 20-HETE synthesizing enzyme, as is recited in the claims.

(C) Reply: The instant invention is not limited to known 20-HETE synthesizing enzyme inhibitors.

(D) Reply: It is acknowledged that the current claims are directed to a method of treatment. However, again, in order to practice said method the disclosure must enable the skilled artisan to use the full scope, including any inhibitor of any CYP4A or CYP4F enzyme.

(E) Reply: This argument is found to be valid.

(F) Reply: It is acknowledged that clinical data are not required to enable an invention.

(G) Reply: Hoagland et al, 2003 was cited to support the argument that the specification fails to identify the target population to be treated. This argument is withdrawn since, the claims recite treatment of a patient or animal with occlusive stroke, hemorrhagic stroke, cerebrovasospasm associated with hemorrhagic stroke, and accumulation of blood in sub-arachnoid space caused by head injury.

For these reasons and those presented in the prior actions, rejection of Claims 1, 7-11, 15, and 17, and 37-44 under 35 U.S.C. 112, first paragraph, lack of enablement, is maintained.

### **Written Description**

Rejection of Claims 1, 7-11, 15, and 17, and 37-44 under 35 U.S.C. 112, first paragraph, written description, for the reasons previously explained, is maintained. In support of their request that said rejection be withdrawn, Applicants provide the following argument.

(H) The gist of the invention resides in the recognition that the four cerebral vascular disease recited in the claims are associated with an increase in 20-HETE level and that inhibitors of CYP4A and CYP4F are effective in treating the diseases. Examples of said inhibitors are disclosed.

This argument is not found to be persuasive for the following reasons.

(H) Reply: It is acknowledged that the current claims are directed to a method of treatment. However, for the reasons described in the actions of July 14, 2005 and April 5, 2006, the disclosure fails to describe said method in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the full scope of the claimed invention.

For these reasons and those presented in the prior actions, rejection of Claims 1, 7-11, 15, and 17, and 37-44 under 35 U.S.C. 112, first paragraph, written description, is maintained.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 1652

Rejection of Claims 1, 17, 37, 39, and 41 under 35 U.S.C. 102(a), as described in the prior actions, as being anticipated by Alonso-Galicia et al, 1999, as evidenced by Wang et al, 1998 is maintained. In support of their request that said rejection be withdrawn, Applicants provide the following argument. That, Alonso-Galicia et al, 1999 teach intra-cerebroventricular injection of DDMS reduces "cerebral blood flow increase". However, the current claims recite using said inhibitor to increase or prevent a decrease in cerebral blood flow, which is completely different. This argument is not found to be persuasive for the following reasons. As acknowledged by Applicant, Alonso-Galicia et al, 1999 teach intra-cerebroventricular injection of the HETE synthesizing inhibitor DDMS. For rejection of Claims 1, 17, 37, 39, and 41 under 35 U.S.C. 102(a), the purpose of said injection is irrelevant; it is only necessary for the prior art to teach the same method. Any effect of the method is inherent to the method itself. For these reasons and those presented in the prior actions, rejection of Claims 1, 17, 37, 39, and 41 under 35 U.S.C. 102(a) as being anticipated by Alonso-Galicia et al, 1999, is maintained.

Rejection of Claims 1, 37, 39, and 41 under 35 U.S.C. 102(b) as being anticipated by Su et al, 1999, as evidenced by Fotherby et al, 1997 or Schmidt et al, 2000, as described in the prior action, is maintained. In support of their request that said rejection be withdrawn, Applicants provide the following arguments. Su et al, teach that 1-ABT is a 20-HETE inhibitor able to lower blood pressure in hypertensive rats. Sue et al do not show that 1-ABT is able to lower blood pressure in normo-tensive rats. Furthermore, it is not true that lowered blood pressure is an effective treatment for stroke. This argument is not found to be persuasive for the following reasons. As acknowledged by Applicant, Su et al teach treatment with a 20-HETE inhibitor. For rejection of Claims 1, 37, 39, and 41 under 35 U.S.C. 102(a), the purpose of said treatment is



Art Unit: 1652

irrelevant; it is only necessary for the prior art to teach the same method. Any effect of the method is inherent to the method itself. For these reasons and those presented in the prior actions, rejection of Claims 1, 37, 39, and 41 under 35 U.S.C. 102(b) as being anticipated by Su et al, 1999, is maintained.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Rejection of Claims 1, 15, 37, and 39-41 under 35 U.S.C. 103(a) as being unpatentable over Roman et al, 1999 in view of Frisbee et al, 2000, for the reasons previously described, is maintained. In support of their request that said rejection be withdrawn, Applicants provide the following arguments.

(I) Roman et al disclose the use of a 20-HETE antagonist, not a 20-HETE synthesis inhibitor.

(J) Neither Roman et al nor Frisbee et al disclose that the increase in 20-HETE level in stroke is caused by increased synthesis rather than release from storage pools. Therefore, it is not obvious to a person of ordinary skill in the art that a 20-HETE synthesizing enzyme inhibitor will work.

These arguments are not found to be persuasive for the following reasons.

Art Unit: 1652

(I) Reply: It is acknowledged that Roman et al disclose the use of a 20-HETE antagonist, not a 20-HETE synthesis inhibitor. As previously stated, it is Frisbee et al who teach use of a 20-HETE synthesis inhibitor (pg H1518, parg 4-5).

(J) Reply: It was known in the art, at the time of filing, that cerebral mirovessels produce 20-HETE and that a 20-HETE synthesizing enzyme inhibitor reduces levels of 20-HETE and increases the activity of the K<sup>+</sup> channel (Harder et el, 1994; IDS). Therefore, the skilled artisan would believe that, more likely than not, other effects of 20-HETE would be inhibited by a 20-HETE synthesis inhibitor.

For these reasons and those presented in the prior actions, rejection of Claims 1, 15, 37, and 39-41 under 35 U.S.C. 103(a) as being unpatentable over Roman et al, 1999 in view of Frisbee et al, 2000, is maintained.

Rejection of Claims 1, 15, and 37-43 under 35 U.S.C. 103(a) as being unpatentable over Roman et al, 1999 in view of Powell et al, 1998 or Lasker et al, 2000, for the reasons explained in the prior action, is maintained. In support of their request that said rejection be withdrawn, Applicants provide the same arguments described above for the rejection of Claims 1, 15, 37, and 39-41 under 35 U.S.C. 103(a) as being unpatentable over Roman et al, 1999 in view of Frisbee et al, 2000. Applicants are directed to the response above as to why said arguments are not found to be persuasive. For these reasons and those presented in the prior actions, rejection of Claims 1, 15, and 37-43 under 35 U.S.C. 103(a) as being unpatentable over Roman et al, 1999 in view of Powell et al, 1998 or Lasker et al, 2000, is maintained.

Art Unit: 1652

There are no new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Regarding filing an Appeal, Applicants are referred to the Official Gazette Notice published July 12, 2005 describing the Pre-Appeal Brief Review Program.

To insure that each document is properly filed in the electronic file wrapper, it is requested that each of amendments to the specification, amendments to the claims, Applicants' remarks, requests for extension of time, and any other distinct papers be submitted on separate pages. It is also requested that Applicants identify support, within the original application, for any amendments to the claims.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheridan L. Swope whose telephone number is 571-272-0943. The examiner can normally be reached on M-F; 9:30-7 EST.

Art Unit: 1652

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Achutamurthy Ponnathapura, can be reached on 571-272-0928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published application may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sheridan Lee Swope, Ph.D.  
Art Unit 1652



**SHERIDAN SWOPE, PH.D.**  
**PRIMARY EXAMINER**